HOTT Activities

Lesson Plan

Minute to Win It!

Materials (In addition to those listed for each individual activity)

- Handheld stopwatch or Internet stopwatch

Directions:

1. Set-up attached activities as stations.
2. Provide an overview of the process to the students.
3. Provide an overview of the activity at each station to the students.
4. Divide students into groups of 2-4.
5. Assign groups of students to a station.
6. Allow a minimum of 10 minutes for each activity.
   a. When students arrive at the station, each one stands or sits by a set of materials.
   b. Give students time to read the medical career and/or background information included with their set of materials.
   c. After students have read the information, give them a few minutes to share with others in their group what they learned.
   d. Have students read the directions for their "Minute to Win It" task.
   e. Give students a warning that time will start in 15 seconds (or whatever time you choose).
   f. Give the starting signal and start the stopwatch.
   g. At the end of one minute, tell students time is up and stop the stopwatch.
   h. Give students time to complete the follow-up activity.
   i. Students clean up and organize materials.
   j. Students rotate to the next station.
   k. Repeat until all students have completed each station.

Option:

1. Set up two or more stations of one to three "Minute to Win It" activities a day during HIPE week if able to get materials.

NOTES:

1. If students are allergic to latex, use vinyl gloves.
2. May want to consider laminating student directions and medical career descriptions for durability purposes.

Minute to Win It: Teacher Instructions
Activity One: Packing a First Aid Kit

Standards

Science	Health	Math	Language Arts
	5.H.5.1	5.G.1.1	5.R.5.1
			5.LVS.1.3
			5.W.1.1
			5.W.1.2
			5.W.2.1

Medical Career Focus: Athletic Trainer, Paramedic/EMT

***Materials:** Per person in group

1. Band-aids of different shapes and sizes (5-10 per person)
2. Individual cleansing wipes
3. Adhesive Tape (Borrow from athletic department)
4. Cotton balls (put a few in a plastic bag)
5. Latex/Vinyl Gloves
6. Ace bandage (borrow from athletic department)
7. Sterile gauze pad in individualized packets (2-3)
8. Cotton tip swabs (travel size packet or put 5-10 in a plastic bag)
9. Tweezers
10. Small bottle of hand sanitizer
11. Cloth cut in triangle shape (represents triangular bandage)
12. Scissors (Small)
13. Ointment (optional)
14. Candy in small container (represents aspirin, Tylenol, Ibuprofen, etc.)
15. A container to put all the objects in. Everything should fit in the container; however, the size of it should be as such that it is challenging to fit everything in it in an orderly fashion.
16. Medical Career Descriptions: Athletic Trainer, Paramedic/EMT. Enough copies so each student has one to read. Some students may read the same description. Descriptions can be found at: http://healthcareers.sd.gov/HOTTCareerTrends.aspx
17. Follow-up Questions: Enough copies for each rotation of students

*If allowable, many of the items can be borrowed from athletic department.

*If have access to prepared first aid kits, they can be used.

Station Set-up:

For each person in group:

1. Set out items with the container next to it.
2. Student Directions
3. Medical Career Descriptions: Athletic Trainer, Paramedic/EMT. Descriptions can be found at: http://healthcareers.sd.gov/HOTTCareerTrends.aspx
4. Follow-up Questions
5. Writing Utensil

Minute to Win It: Student Instructions
Activity One: Packing a First Aid Kit

Task: Can you pack a first aid kit in one minute?

1. Read the *Medical Career Description* located by your materials. After each member of your group has finished reading, share what you learned about the medical career with the others in your group.
2. When the teacher signals, pack the first aid items into the container.
3. Stop when the teacher tells you to stop.
4. Respond to Follow-up Questions. (attached)

Minute to Win It: Student Follow-up Questions
Activity One: Packing a First Aid Kit

Follow-up Questions to Answer

1. Why is it important for an athletic trainer to have easy access to a first aid kit?

2. Take out the items and classify them into geometric shapes. Record it on the chart.

Geometric Shape	Items

3. Choose one of the items and write a paragraph that explains how an athletic trainer or a paramedic/EMT might use it. In a second paragraph, write a very detailed description of the item.

Minute to Win It: Teacher Instructions
Activity Two: A Germy Situation

Standards

Science	Health	Math	Language Arts
5.L.2.1	5.H.5.1	5.S.1.1	5.R.5.1 5.LVS.1.3 5.W.1.2 5.W.2.1

Medical Career Focus:

Epidemiologist, Clinical Lab Scientist/Med Lab Scientist, Clinical Lab Technician/Med Lab Technician, Microbiologist

Materials:

1. Five to six different shapes that are tiny or five to six different colors of tiny paper punched circles; twenty of each shape or color. Each shape/color represents a germ (bacteria/virus).
2. Three to five petri dishes or similar containers that are 3-4 inches in diameter to represent petri dishes per person in group
3. One pair of tweezers per person in group
5. Latex/Vinyl gloves for each person in group (required – working with "bacteria/viruses"!)
6. Medical Career Descriptions: Epidemiologist, Clinical Lab Scientist/Med Lab Scientist, Clinical Lab Technician/Med Lab Technician, Microbiologist. Enough copies so each student has one to read. Some students may read the same description. Descriptions can be found at: http://healthcareers.sd.gov/HOTTCareerTrends.aspx
7. Germy Situation Chart: Enough copies for each rotation of students (attached)

Preparation:

1. Label each petri dish as follows: bathroom sink, student desk, door handle, drinking glass, cell phone, and/or locations/items of your choice.
2. Randomly place a mixture of 15-20 bacteria/virus shapes/color in each petri dish. Include 3-5 different bacteria/virus.
    a. Option: Identify the bacteria/virus each shape/color represents such as salmonella, streptococcus, pneumonia, influenza, common cold, bronchitis, pneumonia, mononucleosis, rotavirus, staph, etc . For example, circles represent salmonella, triangles represent streptococcus, squiggly lines represent influenza, etc.

Station set-up

For each person in group:

1. Five petri dishes with germs
2. Tweezers
3. Latex/plastic gloves
4. Germy Situation Chart
5. Medical Career Description: Epidemiologist, Clinical Lab Scientist/Med Lab Scientist, Clinical Lab Technician/Med Lab Technician, Microbiologist
6. Writing Utensil
7. Student Directions

Minute to Win It: Student Instructions

Activity Two: A Germy Situation

Task: How many "petri dishes" of bacteria can you count in one minute?

1. Read the Medical Career Description located by your materials. After each member of your group has finished reading, share what you learned about the medical career with the others.
2. Put on a pair of gloves
3. When the teacher signals, choose a petri dish
   - Record the place (bathroom, door knob, sink, etc.) from which the sample was taken on the chart
   - Using the tweezers, sort the bacteria/viruses by shapes/color
   - Count the number of bacteria/viruses (shapes/color) and record on chart
   - Repeat with the next petri dish
4. Stop when the teacher tells you to stop.
5. Answer the questions below the chart.

Minute to Win It: Student Follow-up Questions

Activity Two: A Germy Situation

Name:

Name of Source	Blue (Flu)	Red (Salmonella)	Yellow	Green	Black
Ex. *Bathroom*	3	2	0	6	8

Questions to Answer

1. Why is it important for clinical lab scientists/med lab scientists and technicians and microbiologists and to wear gloves when working with bacteria or viruses?

2. On the back of this paper, create a bar graph showing the number of each "bacteria/virus".

3. As an epidemiologist, what conclusions can you make based on your data?

4. As an epidemiologist, what recommendations would you make to stop the spread of bacteria/virus?

Minute to Win It: Teacher Instructions
Activity Three: Puzzling Genes

Standards

Science	Health	Math	Language Arts
5.L.2.1	5.H.5.1	5.A.3.2	5.R.5.1
		5.N.2.1	5.LVS.1.3
		5.N.2.3	5.W.1.1
			5.W.2.1

Medical Career Focus: Geneticist, Genetic Counselor

Materials:

1. Two identical jigsaw puzzles easy in difficulty for every two students
2. Two to four different colored paints
3. Containers for puzzle pieces
4. Latex/Vinyl Gloves (optional)
5. Medical Career Descriptions: Geneticist, Genetic Counselor. Enough copies so each student has one to read. Some students may read the same description. Descriptions can be found at: http://healthcareers.sd.gov/HOTTCareerTrends.aspx
6. Background Information: one or two copies per group (attached)
7. Follow-up Questions: Enough copies for each rotation of students

Preparation:

1. Put together two identical puzzles.
2. Paint all the pieces of one puzzle red.
3. Paint pieces of second puzzle blue. (Consider drying time)
4. Remove a red puzzle piece then remove the corresponding piece from the blue puzzle. Place the blue puzzle piece where the red piece was removed. Place the red piece in the appropriate space in the blue puzzle. Continue to do this until each puzzle is half red and half blue. (See illustration in Background Information for an example.)
5. Once you have two completed puzzles, put each in a separate container. Label one container "A", another "B", etc. Mark the back of each puzzle piece in container "A" with the letter "A", container "B", with the letter "B", etc. The purpose of labeling each puzzle piece is to make separating the pieces easier if they should get co-mingled. Also write the total number of pieces on the container.
6. Repeat the process until have enough containers for each person in the group. For example, if four students in a group, you will need four containers with puzzle pieces. You may also want to consider using two different colors such as yellow and green.

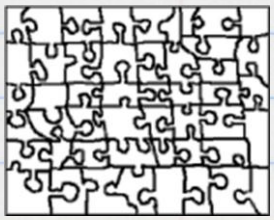
Station Set-up

For each person in the group:

1. One puzzle that has two different colors
2. Follow-up Questions
3. Latex/vinyl gloves (optional)
4. Medical Career Descriptions: Geneticist, Genetic Counselor
5. Background Information
6. Writing Utensil
7. Student Directions

Background Information

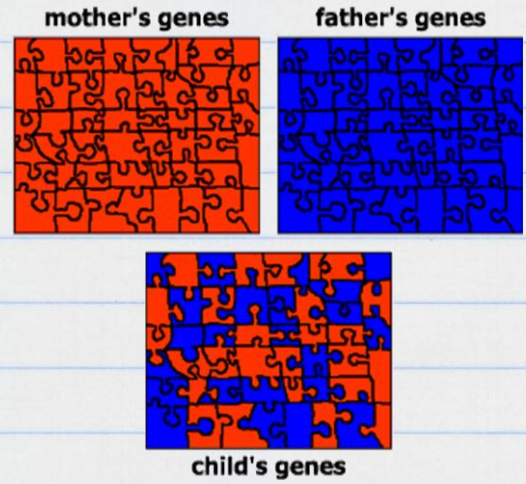
One way to think of our genetic make-up is like a jigsaw puzzle. Each puzzle piece would represent a set of genes organized in a specific way, similar to a chromosome. Because all humans have the same set of genes, arranged in the same order, every family member would have the same basic set of puzzle pieces. A generic human jigsaw puzzle might look like the picture at the right.



But the information carried in genes differs slightly from person to person. This is what makes each of us unique. As a result, the colors of the puzzle pieces would be different between family members. While some relatives might share puzzle pieces of a certain color, other pieces would be different. Only identical twins share the exact same combination of colors and shapes.

What might a family's puzzles look like?

Look at the family of jigsaw puzzles below. Can you see how some of the child's genes are derived from one parent and some from the other parent?



The child receives exactly half of its genetic information from the mother and exactly half from the father.

Genetic Science Learning Center (2011, January 24) Finding a Gene on the Chromosome Map. Learn.Genetics. Retrieved October 19, 2011, from http://learn.genetics.utah.edu/archive/pedigree/index.html

Minute to Win It: Student Instructions

Activity Three: Puzzling Genes

Task: How much of the "genetic map" can you put together in one minute?

1. Read the Medical Career Description or background information by your materials. As each member of your group has finished reading, share what you learned about the medical career or background description with the others in your group.
2. Read background information.
3. If gloves are at the station, put on a pair of gloves.
4. When the teacher signals the start, dump the "genes" (puzzle pieces) in the container onto the table.
5. Start putting the "genetic map" together.
6. Stop when the teacher tells you to stop.

Minute to Win It: Student Follow-up Questions

Activity Three: Puzzling Genes

1. As a geneticist, you are putting together a genetic map for a patient.
   a. How many pieces of the "genetic map" did you put together?

   b. How many total pieces are in the container? (Look on container)

   c. Complete the formula for percent: Take the number of pieces you put together and divide it by the total number of pieces in the puzzle. Take your answer and multiply it by 100. What percentage of the "genetic map" did you put together?

2. Write a five sentence paragraph describing three to five genetic traits you inherited from your parents.

Minute to Win It: Teacher Instructions

Activity Four: Reading Labels!

Standards

Science	Health	Math	Language Arts
5.L.2.1	5.H.5.1		5.R.5.1 5.L.V.S. 1.3

Medical Career Focus: Dietetic Technician, Dietitian/Nutritionist, Health Educator

Materials:

1. Six to twelve food labels from a variety of foods
   - Actual food items, empty food item containers, or food labels removed from food items can be used. Be sure students are able to identify the specific food item the label represents.
   - Suggested items: yogurt, soup, Spaghettios, cereal, bread, frozen dinner, chips, etc.
   - Food labels also are available at http://www.nourishinteractive.com/hco/free_printables/food-labels-worksheets-printables-teaching-kids-reading-food-labeling-nutrition-facts-free-learning-printouts-activity#sec_2
2. Medical Career Descriptions: Dietetic Technician, Dietitian/Nutritionist, Health Educator. Enough copies so each student has one to read. Some students may read the same description. Descriptions can be found at: http://healthcareers.sd.gov/HOTTCareerTrends.aspx
3. "What's in a Food Label Chart". Enough copies for each rotation of students. (attached)

Preparation:

1. Collect food items, empty food item containers, food labels removed from food items, or food labels from web site mentioned above.

Station Set-up: For each person in group:

1. Three food items or food labels
2. "What's in A Food Label" Chart (attached)
3. Medical Career Descriptions: Dietetic Technician, Dietitian/Nutritionist, Health Educator
4. Writing Utensil
5. Student Directions

Minute to Win It: Student Instructions

Activity Four: Reading Labels!

Task: How much of three food labels can you compare in one minute?

1. Read the Medical Career Description located by your materials. After each member of your group has finished reading, share what you learned about the medical career with the others in your group.
2. Record the name of the food items you are comparing, one per column. (attached chart)
3. Record the serving size and the number of servings per container. (attached chart)
4. When the teacher signals, start comparing the food labels by answering the questions on the chart.
5. Stop when the teacher tells you to stop.
6. Answer the questions below the chart.

Minute to Win It: Student Follow-up Questions

Activity Four: Reading Labels!

Name:

What's in a Food Label?

	Write in the name of Food Labels you are comparing		
	1.	2.	3.
Serving Size			
Servings Per Container			
Put a checkmark in the box that is best described:			
Most sodium per serving			
Most carbohydrates per serving			
Most saturated fat per serving			
Least sugar per serving			
Most calories from fat per serving			
Most trans-fat per serving per serving			
Most total fat per serving			
Has less sodium per serving			
Least amount of calories per serving			
Most protein per serving			
Most Vitamin A per serving			
More Vitamin C per serving			
Most Calcium per serving			
Most Iron per serving			

Source: Nourish Interactive.com *Health and Nutrition Educators*. Retrieved October 21, 2011, from http://www.nourishinteractive.com

Questions to Answer (answer on back)

1. If you were a dietetic technician, nutritionist, or a dietitian which of the three food items would you tell your client is more healthy and why?

2. You are a health educator explaining to a group of people what they can find on a food label. Other than the nutrients that are in the food, what else do you find on food labels?

Minute to Win It: Teacher Instructions

Activity Five: Sugar Count

Standards

Science	Health	Math	Language Arts
5.L.2.1	5.H.5.1	5.S.1.1	5.R.5.1
		5.M.1.4	5.LVS.1.3

Background Information:

Dentist, Dental Hygienist, Certified Dental Assistant, Dental Laboratory Technician

Materials: Per Person in Group:

1. 30 sugar cubes
2. Five to six bottles/cans of different drink. Choose five to six from the following (or similar): Coke, Pepsi, Mountain Dew, Gatorade, Red Bull, Kool-Aid NOTE: No diet drinks
3. Scale (measure in grams)
4. Clear plastic drink cups to put sugar cubes in when measuring
5. Latex/Vinyl Gloves (optional)
6. Medical Career Descriptions (Dentist, Dental Hygienist, Certified Dental Assistant, Dental Laboratory Technician): Enough copies so each student has one to read. Some students may read the same description. Descriptions can be found at: http://healthcareers.sd.gov/HOTTCareerTrends.aspx
7. Sugar Count Chart: Enough copies for each student. (attached)

Preparation:

1. Place 30 cubes in a clear plastic cup for each student in group

Station Set-up: For each person in group:

1. Sugar cubes in a container
2. Arrange scale, sugar cubes and drinks for easy use by student
3. Student Directions
4. Medical Career Descriptions (Dentist, Dental Hygienist, Certified Dental Assistant, Dental Laboratory Technician)
5. Writing utensil
6. Sugar Count Chart and questions

Minute to Win It: Student Instructions

Activity Five: Sugar Count

Task: How many different drinks can you measure the amount of sugar it has in it in one minute?

1. Read the Medical Career Description by your materials. After each member of your group has finished reading, share what you learned about the medical career with the others.
2. If gloves are at the station, put on a pair of gloves
3. Put a clear plastic container on the scale. Record its weight in grams on the chart.
3. When the teacher signals, choose a bottle of drink.
    - Record the name of the drink on the chart
    - Look at the label to determine how much sugar there is in a serving.
    - Put sugar cubes in the container on the scale until it reaches the same amount of grams for a single serving.

      Example: If one serving of the drink contains 15 grams of sugar, put sugar cubes in the container on the scale until it reaches 15 grams.
    - Record the number of grams and number of sugar cubes on the provided chart
    - Choose another drink and repeat
4. Stop when the teacher tells you to stop.

Minute to Win It: Student Follow-up Questions

Activity Five: Sugar Count

Name:

Sugar Count Chart

Weight of Cup _____

Name of Drink	Weight in Grams weight of sugar cubes - weight of cup = weight in grams	Number of Sugar Cubes
Ex. Grape Kool-aid	25 gr – 5 g = 20 gr	

Questions to Answer

1. Why did you measure the weight of the cup before you measured the sugar?

2. On the back of this paper, create a bar graph showing how much sugar is in the drinks.

3. Why should you be concerned about how much sugar there is in a drink?

4. If you were a dentist or dental hygienist, what would you tell your patient is the effect of drinking too many sugary drinks on their teeth?

5. Were you surprised by any of the results? Why or Why not?

Minute to Win It: Teacher Instructions

Activity Six: OJ Squeeze

Standards

Science	Health	Math	Language Arts
5.L.2.1	5.H.5.1	5.M.1.3	5.R.5.1 5.LVS.1.3

Background Information:

Dietitian/Nutritionist, Health Educator, Pharmacy Technician, Pharmacist

Materials:

1. Three oranges cut in quarters per person in group
2. One 50-100 ml graduated cylinder per student in group
3. One container at least 9x9 per person (i.e. cake pan)

   One container large enough to hold 12 orange quarters per student in group
4. One bottle of orange juice and one bottle orange drink OR copy of a label from each per student in group. A sample label of each can be found at http://www.fns.usda.gov/tn/Resources/nibbles/juice.pdf.
5. Latex/vinyl gloves per student in group (optional)
6. Rags to clean up per group
7. Wipes or wet rag for student to clean hands per group
8. Mat or towel per student in group or tablecloth to cover table
9. Medical Career Descriptions: Dietician/Nutritionist, Health Educator, Pharmacy Technician, Pharmacist. Enough copies so each student has one to read. Some students may read the same description. Descriptions can be found at: http://healthcareers.sd.gov/HOTTCareerTrends.aspx
10. Follow-up Questions: Enough copies for each student.

Preparation: For each person in group:

1. Cut three oranges in quarters

Station set-up

For each person in group:

1. Place mat, towel, or tablecloth on table
2. Place graduated cylinder in 9x9 pan
3. Place 12 orange quarters in container and set next to pan
4. Latex/vinyl gloves (optional)
5. Medical Career Description: Dietitian/Nutritionist, Health Educator, Pharmacy Technician, Pharmacist
6. Follow-up Questions
7. Writing utensil
8. Student Directions

Minute to Win It: Student Instructions

Activity Six: OJ Squeeze

Task: How much juice can you squeeze out of the oranges in one minute?

1. Read the Medical Career Description by your materials. After each member of your group has finished reading, share what you learned about the medical career with the others.
2. If gloves are at the station, put on a pair of gloves.
3. When the teacher signals, start squeezing the juice from the oranges into the graduated cylinder.
4. Stop when the teacher tells you to stop.
5. Complete Follow-up Questions.

Minute to Win It: Student Follow-up Questions

Activity Six: OJ Squeeze

1. How many ml of juice did you get into the graduated cylinder?

2. Pharmacists and pharmacist technicians need to accurately measure the medicine for their customers/patients. There are approximately 225 ml in one cup. If one cup equals one serving of juice, how many oranges would you need to squeeze to get one serving?

3. What factors might influence the number of oranges needed to get one serving?

4. Compare nutrition and ingredient labels of orange juice and orange drink. If you were a health educator or a dietitian, which would you recommend to your client as the healthier choice? Why?